

TITLE

STRUCTURE OF CAP HAVING STORING SPACE

TECHNICAL FIELD

5 The present invention relates to a cap with a storage chamber for secondary material, and more particularly, to a cap with a storage chamber for secondary material that will be mixed with primary material contained in a container associated with the cap by simple opening the cap.

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BACKGROUND ART

 In a variety of industrial field, it is sometimes necessary to mix two or more different materials with each other to prepare a mixture, prior to using the mixture.

15 For example, when it comes to beverage industrial field, users wishes to add a variety of flavors or vitamin to the water. To this end, the user purchases the flavor or vitamin and the separated bottle water and mixes the flavor or the vitamin with the bottle water. However, it is very
20 troublesome for the user to do so.

SUMMARY OF THE INVENTION

Therefore, the present invention has been made in an effort to solve the above-described problems of the conventional art.

It is an object of the present invention to provide a
5 cap with a storage chamber for a secondary material that will be mixed with a primary material contained in a container associated with the cap by simply opening the cap.

It is another object of the present invention to provide a cap with a storage chamber for a secondary material, which
10 is designed considering a safety by preventing an inner cap member separated from the cap from being removed.

It is another object of the present invention to provide a cap with a storage chamber for a secondary material, which can be made with less expenses.

15 To achieve the above objects, the present invention provides a cap assembly that can be associated with a container storing a primary material, the cap assembly including a lid fixed on a top of the container and having an exhausting portion projected upward, a cap main body
20 detachably coupled to the exhausting portion of the lid and having a storage tube extending downward to define a storage chamber for storing a secondary material, and an inner cap

body detachably coupled to the storage tube.

BRIEF DESCRIPTION OF THE DRAWINGS

5 FIG. 1 is a partial sectional view of a cap with a storage chamber according to a first embodiment of the present invention;

 FIG. 2 is a partial sectional view illustrating an operational state of a cap with a storage chamber according
10 to a first embodiment of the present invention;

 FIG. 3 is a sectional view of a second embodiment of the present invention;

 FIGS. 4 and 5 are views of a third embodiment of the present invention;

15 FIG. 5 is a sectional view illustrating an operation of a cap with a storage chamber according to the present invention;

 FIG. 6 is a sectional view of a fourth embodiment of the present invention;

20 FIGS. 7 through 9 are views of a fifth embodiment of the present invention; and

 FIG. 9 is a view of a modified example of a lid.

BEST MODE FOR CARRYING OUT THE INVENTION

Preferred embodiments of the present invention will be described more in detail hereinafter in conjunction with the accompanying drawings. Wherever possible, the same reference numerals will be used throughout the drawings to refer to the same or like parts.

FIG. 1 shows a cap assembly with a storage capacity according to a first embodiment of the present invention. A container main body 100 has an opened top and an attaching portion 101 formed at a top edge.

A lid 200 is attached on the top edge of the container main body 100. The lid 200 is formed in a cone-shape and provided with an exhausting portion 201. A seal step 202 is formed extending downward from the exhausting portion 201.

The lid 200 is provided at a lower end with an attaching portion 203 that is to be attached to the attaching surface 101. A cover portion 204 is formed at a lower portion of the attaching portion 203 and the exhaust portion 201.

Meanwhile, the exhaust portion 201 is coupled to a cap body 210. The cap body 210 includes an upper portion 211, a side portion 212 extending downward from the edge of the

upper portion 211, a storage tube 213 extending from the upper
portion 211 and spaced from the side portion 212, a storage
chamber 214 formed inside the storage tube 213 to store a
secondary material 215 such as powder, and an inner cap body
5 216 detachably attached on a lower portion of the storage tube
213.

An outer surface of the storage tube 213 tightly contacts
an inner surface of the seal step 202 to prevent a primary
material from leaking.

10 In the above-described embodiment, the primary material
is stored in the container main body 100 and a cap body 210
is coupled to the exhaust portion 201. At this point, the
secondary material 215 is filled in the storage chamber 214.
In this state, the inner cap body 216 is coupled to the lower
15 portion and the attaching portions 101 and 203 are attached
to each other.

At this point, when the cap body 210 is separated from
the exhausting portion 201, the inner cap body 216 is
separated from the storage tube 213 by the seal step 202. As
20 a result, the secondary material stored in the storage chamber
214 falls into the container body 100 to be mixed with the
primary material contained in the container body 100. The

mixed material can be exhausted through the exhausting portion 201.

The inner cap body 216 falls down into the container main body 100 cannot be exhausted by the seal step 202, thereby
5 preventing the user to inadvertently swallowing the inner cap body 216.

FIG. 3 shows a second embodiment of the present invention.

A falling chamber 300 is formed extending inward of a
10 container body 100 from an exhausting portion 201 formed on a lid 200. An inner cap body 316 is inserted into a bottom of a storage tube 213 coupled on a lower portion of the falling chamber 300.

When the cap body 210 is separated from the exhausting
15 portion 201, the inner cap body 316 is separated from the storage tube 213 to allow the secondary material to be mixed with the primary material in the container main body 100.

FIGS. 4 and 5 show a third embodiment of the present invention.

20 A cap body 400 is coupled to an exhausting portion 201 of a lid 200. The cap body 400 is provided at an upper portion with an exhausting portion 401 to which an outer cap 500 is

detachably coupled to the exhausting portion 401. A hooking
step 402 is formed on a lower portion of the exhausting portion
401 and a storage member 410 functioning as a straw is inserted
in the exhausting portion 401. The storage member 410 defines
5 a storage chamber 411 in which the secondary material 215 is
stored. A stopper 412 on which the hooking step 402 may be
caught is formed on a lower-center portion of the storage
member 410.

The lower end of the storage member 410 is tightly fitted
10 around the inner cap body 316 to prevent the secondary
material 215 from inadvertently exhausted.

The storage member 410 is coupled to the outer cap 500
to elevate together with an outer cap body 500. After the
storage member 410 is elevated by a predetermined height by
15 the outer cap 500, the storage member 410 is separated from
the outer cap 500.

The secondary material 215 is exhausted to a falling
space 300 that is opened by the storage member 410 that
elevates when the outer cap body 500 is separated.

20 FIG. 6 shows a fourth embodiment of the present
invention.

The structure of the container main body 100 and the cap

body 400 are identical to those of the cap body third embodiment.

A cutting plate 600 is integrally formed on a bottom of an exhausting portion 201 of a lid 200 to be capable of being
5 cut away by a cutting line 601. A storage member 410 is inserted in the exhausting portion 401 of the cap body 400. An outer cap body 500 is detachably coupled to an outer portion of the exhausting portion 401.

The storage member 410 functioning as a straw has an
10 pointed extreme end and is coupled to a key groove K formed on an inner surface of the exhaust portion 201, thereby being prevented from rotating. An inner coupling portion 602 is screw-coupled to an inner surface of the storage member 410.

When the outer cap body 500 is elevated by the
15 screw-operation with the exhausting portion 401, the storage member 410 descends to cut the cutting plate 600.

As a result, the secondary material stored in a storage chamber 411 formed in the storage member 410 can be mixed with the primary material contained in the container main body 100.

20 At this point, the storage member 410 cannot rotate by the key groove K, thereby descending when the outer cap body 500 ascends.

FIGS. 7 through 9 show a fifth embodiment of the present invention.

This embodiment is similar to the first embodiment except for the structure of the lid 200.

5 The lid 200 is provided with a plurality of inclined exhausting pieces formed on an inner-lower portion of an exhausting portion 201. Extreme ends of the exhausting pieces are disposed on an edge of the inner cap body 216.

10 An exhaust space 800 through which the secondary material 215 stored in a storage chamber 214 formed in the cap body 210 can be exhausted.

15 As shown in FIG. 9, the exhausting pieces 700 is provided with a bending portion 701 interposed between the upper edge of the inner cap body 216 and the lower end of the storage tube 213. When the storage tube 213 ascends, the inner cap body 216 can be effectively separated.

20 In the above-described embodiment, when the cap body 210 is separated from the exhausting portion 201, the storage tube 2134 ascends. At this point, the exhausting pieces 700 cannot ascend as they tightly contact the end of the inner cap body 216, thereby separating the inner cap body 216 is separated from the storage tube 213. As a result, the secondary

material 215 falls down to the container main body 100 through the exhausting space 800 to be mixed with the primary material contained in the container main body 100.

In addition, by forming the bending portion 701 on the
5 extreme end of the exhausting pieces 700, the inner cap body 2165 cannot ascend as the bending portion 701 is inserted between the upper end of the inner cap body 216 and the lower end of the storage tube 213, thereby more effecting separating the inner cap body 216 from the storage tube 213.

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INDUSTRIAL APPLICABILITY

The present invention can be applied to any containers that stores liquid or powder material. The concept of the present invention can be applied to any containers regardless
15 of the material of the container.